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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/000,156 | 10/30/2001 | Severine Leveau-Mollier | | 8241 |

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| EXAMINER |
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LU, TOM Y

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| ART UNIT | PAPER NUMBER |
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2621

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|--------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/000,156 | LEVEAU-MOLLIER, SEVERINE | |
| | Examiner | Art Unit | |
| | Tom Y. Lu | 2621 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 31-46 and 68-73 is/are rejected.
- 7) ☒ Claim(s) 12-30 and 47-67 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Request for Continued Examination filed on 12/22/2005 has been entered.
2. Upon entry of Request for Continued Examination, the amendment and written response filed on 12/22/2005 has been entered and considered.
3. Claims 1 and 36 have been amended.
4. Claim 73 has been added.
5. Claims 1-73 are pending.

Response to Arguments

6. Applicant's arguments, see Remarks, filed 12/22/2005, with respect to the rejection(s) of claim(s) 1-6, 9-11, 36-41, and 44-46 under 35 U.S.C 102 (e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Cho (U.S. Patent No. 6,795,118 B1) and Imaino et al (U.S. Patent No. 5,847,823).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-11, 35-46 and 72-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho (U.S. Patent No. 6,795,118 B1) in view of Imaino et al (U.S. Patent No. 5,847,823).
 - a. Referring to Claim 1, Cho discloses an image sensor testing system, which tests pixels in one or more windows by comparing the pixels in the windows with a given

pixel value to determine whether the pixels in the windows are good or bad, column 2, lines 16-26. Additionally, Cho discloses a counter for counting the number of bad pixels in the window to determine whether the sensor is defective by comparing the number of bad pixels with a threshold value, column 2, lines 62-65 and column 3, lines 1-6. However, Chol does not teach the testing system using a sliding window, which is configured to occupy a number of image sensor lines less than the total number of image sensor lines, and the sliding window slides from a first position to a second position such that the second position frames the same number of lines as the first position, the number of lines being greater than one and the second position frames all but one of the lines from the first position. Imaino et al at column 13, lines 1-3 and 14-25, teaches using the sliding window technique to determine the defects in a pixel-based image, in which a sliding window determines whether the number of defect pixels in the window exceeds a particular value, and if the number of defect pixels in the sliding window exceeds the particular value, then the image is deemed defective. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use sliding window technique taught by Imaino in Cho's system. And a person of ordinary skill in the art would be motivated to do so because Cho already teaches examining image pixels in windows on a test image captured by an image sensor to determine the state of image sensor, and the use of sliding window technique provides a more thorough examining of the test image and it would make a better determination on whether or not the image sensor is faulty. The examiner notes the sliding window taught in Imaino demonstrates the size of the sliding window is modifiable, column 13, line 17, and although Imaino does not

explicitly show a sliding window configured to occupy a number of image pixel lines and how it slides from one position to the next by one line at a time, they are inherent characteristics of sliding window technique, and they can be evidenced in figure 6 of U.S. Patent No. 5,339,092. The examiner further notes no motivation is provided herein for U.S. Patent No. 5,339,092 since U.S. Patent No. 5,339,092 is incorporated as an evidentiary reference. (*In re Donohue*, 766 F.2d at 533, 226 USPQ at 621. See MPEP § 2131.01 for more information on using secondary references to show that the primary reference contains an "enabling disclosure.")

- b. Referring to Claim 2, the combination of Cho and Imaino discloses wherein the controlling step comprises moving the window line by line over the entire cartography and, for each position of the window, making a calculation from the number of bad pixels present in the window (see explanation for claim 1).
- c. Referring to Claim 3, the combination of Cho and Imaino discloses where the processing of bad pixels is intended to be carried out in parallel, each line of pixels on output of the sensor being divided into a number of sections, the pixels of each section being assigned to a respective parallel processing path, and the set of bad pixels counted in a window on the controlling steps comprises, for each line of the window, solely of bad pixels to be found in a section among the line sections where they are most numerous (Cho teaches the capability of column-parallel readout architecture for image array, column 3, line 45 and an counter for counting the number of bad pixels in a window, column 2, line 63-65).
- d. With regard to Claim 4, see explanation in Claim 3.

- e. Referring to Claim 5, the combination of Cho and Imaino discloses wherein the set of bad pixels counted comprises the sum of the most numerous pixels in a line section on each of the lines of the window, which sum must not exceed the maximum limit (Cho: column 3, lines 20-24 or Imaino: column 13, line 15).
- f. With regard to Claim 6, see explanation in Claim 5.
- g. Referring to Claim 7, the combination of Cho and Imaino does not explicitly teach the number of line section is equal to four, and the bad pixels being processed in parallel on four. However, Imaino teaches the size of the sliding window is modifiable and Cho teaches the image pixel can be readout in parallel. Additionally, applicant does not teach having the number of line section equal to four would solve any stated problem nor would post any significant advantages, and it appears that having any number of line section would perform equally well.
- h. With regard to Claim 8, see explanation in Claim 1.
- i. Referring to Claim 9, the combination of Cho and Imaino discloses wherein the set of bad pixels counted on the controlling step consists of the sum of the bad pixels in the window (Cho: column 3, lines 20-23 or Imaino: column 13, line 15).
- j. With regard to Claim 10, see explanation in Claim 9.
- k. Referring to Claim 11, the combination of Cho and Imaino discloses wherein a sensor is rejected if there should only one location of the window on its cartography for which the set of bad pixels is incompatible with the maximum limit (when an area location of the window consists number of bad pixels more than the maximum limit, the sensor must be rejected since it already exceeds the maximum tolerance threshold value).

- l. Referring to Claim 35, the combination of Cho and Imaino does not explicitly teach the qualification of sensors is intended for medical radiology. However, the examiner takes official notice that Cho's sensor can be used in the medical field for radiology.
 - m. With regard to Claim 36, see explanation in Claim 1.
 - n. With regard to Claim 37, see explanation in Claim 2.
 - o. With regard to Claim 38, see explanation in Claim 3.
 - p. With regard to Claim 39, see explanation in Claim 4.
 - q. With regard to Claim 40, see explanation in Claim 5.
 - r. With regard to Claim 41, see explanation in Claim 6.
 - s. With regard to Claim 42, see explanation in Claim 7.
 - t. With regard to Claim 43, see explanation in Claim 8.
 - u. With regard to Claim 44, see explanation in Claim 9.
 - v. With regard to Claim 45, see explanation in Claim 10.
 - w. With regard to Claim 46, see explanation in Claim 11.
 - x. With regard to Claim 72, see explanation in Claim 35.
 - y. With regard to Claim 73, see figure 6 in the evidentiary patent, 5,339,092.
8. Claims 31-34 and 68-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho and Imaino et al as applied to claim 1 above, and further in view of Lawrence (U.S. Patent No. 6,219,443 B1).
- a. Referring to Claim 31, Cho discloses the threshold value 122 is determined. And Imaino teaches the percentage of bad pixels is determined based on the size of the slide window. Neither Cho nor Imaino explicitly teaches the calculation of the maximum limit, the threshold value 122 in Cho, of number of bad pixels in a given

area of the image that can be processed may include a first phase of establishment of a real limiting value and a second stage of obtaining a limiting value used for the control step, the latter value being obtained by reducing the real limiting value. Lawrence teaches comparing the number of bad pixels with average and standard deviation of the entire display, note the claimed “real limiting value” in the first phase is the size of the display, and then compare the number of bad pixels in an NxN block with average and standard deviation of the NxN block, note the claimed “limiting value” in the second stage is the size of the block, which is smaller than the size of the entire display, and because the NxN block is smaller than the entire display, the limitation of “the latter value being obtained by reducing the real limiting value” is satisfied. At the time the invention was made, a person of ordinary skill in the art would have been motivated to adapt Lawrence’s bad pixel counting technique in the combinational system of Cho and Imaino because Lawrence’s technique of inspecting the number of bad pixels in a display is an alternative to Cho’s and Imaino’s, and Cho at column 3, lines 55-57, teaches other improvements and modifications are welcomed. And Imaino at column 13, lines 19-20 hints the parameters such as the percentage of the bad pixels is modifiable.

- b. With regard to Claim 32, see explanation in Claim 31.
- c. Referring to Claim 33, Cho does not explicitly teach the sensor delivering a series of images to determine the bad pixels, however, it is understood in the art that a sensor can be a standard video camera sensor, which delivering the image at a rate of 30 image per second, which is a fixed separation between two successive images, and Cho teaches the processing is done one image at a time, therefore, the number of bad

pixels in one image frame is determined before the next frame starts. With the bad pixel detecting technique taught by Lawrence as taught in Claim 31 above, the values of the average and standard deviation of the image change because of the change in images, and the maximum number of bad pixels per image will vary accordingly. The motivation for combining Cho and Lawrence is provided in Claim 31.

- d. With regard to Claim 34, the examiner takes official notice the combination of Cho, Imano and Lawrence system can provide remaining time greater than or equal to 690 microseconds because the remaining time is dependent upon the speed of the system processor. According to Cho, his system welcomes improvements, it would be obvious to adapt a fast system processor to reduce the processing time, which results an increase in remaining time.
- e. With regard to Claim 68, see explanation in Claim 31.
- f. With regard to Claim 69 see explanation in Claim 68.
- g. With regard to Claim 70, see explanation in Claim 33.
- h. With regard to Claim 71, see explanation in Claim 34.

Allowable Subject Matter

9. Claims 12-30 and 47-67 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

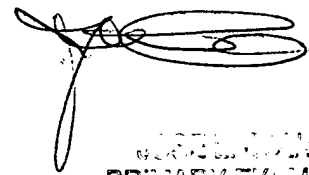
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y. Lu whose telephone number is (571) 272-7393. The examiner can normally be reached on 8:30AM-5PM.

Art Unit: 2621

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571)-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Y. Lu



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PRIMARY EXAMINER